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EXAMINER

SHAPIRO, LEONID

ART UNIT PAPER NUMBER

2673

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,693

Applicant(s)

KOYAMA ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-104 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-104 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 19-25, 71-79, 80-87 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis (US Patent No. 5,589,847) in view of Suzuki (US Patent No. 4,571,584).

As to claim 1, Lewis teaches an image display device with: a pixel array portion including k (k is an integer not less than 2) signal lines, a plurality of scan lines, a plurality of pixel electrodes provided at respective regions where the respective signal lines and the respective scan lines intersect with each other, and plurality of switching elements for driving the plurality of pixel electrodes; a signal line driver circuit for driving the k signal lines and a scan line driver circuit for driving the plurality of scan lines, wherein the signal line driver circuit includes shift registers to which m-bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See

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Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers with the number of the shift registers being m or multiple of m , $m * k/n$ storage circuits for storing output signals of the shift registers.

Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and correspondent storage circuits in the Lewis apparatus in order to reduce the number of components and simplify layout of the substrate.

As to claim 2, Lewis teaches the number of the D/A converter circuit k/n , if the k -number of signal lines and n -number of signal lines driven by the particular D/A (See Fig. 15A, item 550).

As to claim 3, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig. 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 4-7, Lewis teaches the storage circuit is a latch circuit with analog switch (See Fig. 15, item 515), holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col. 10, Lines 1-21).

As to claim 8, Lewis teaches liquid crystal display (See Col. 1, Line 15).

As to claim 19, Lewis teaches an image display device with: a pixel array portion including k (k is an integer not less than 2) signal lines, a plurality of scan lines, a plurality of pixel electrodes provided at respective regions where the respective signal lines and the

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respective scan lines intersect with each other, and plurality of switching elements for driving the plurality of pixel electrodes; a signal line driver circuit for driving the k signal lines and a scan line driver circuit for driving the plurality of scan lines, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and plurality signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines, wherein an operation in which the digital picture signals are inputted to the respective shift registers, the inputted, the inputted digital picture signals are shifted in the shift register until they are outputted to the corresponding storage circuit by a latch signal, is repeated n times in a time corresponding to one horizontal scan period (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers which multi-bit picture signals are inputted Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and correspondent storage circuits in the Lewis apparatus in order to reduce the number of components and simplify layout of the substrate.

As to claim 20, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 21-24, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col. 10, Lines 1-21).

As to claim 25, Lewis teaches liquid crystal display (See Col. 1, Line 15).

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As to claim 71, Lewis teaches a signal line driver circuit of image display device with: for driving k (k is an integer not less than 2) signal lines, a signal line driver circuit with shift registers to which m -bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers with the number of the shift registers being m or multiple of m , $m * k/n$ storage circuits for storing output signals of the shift registers.

Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and correspondent storage circuits in the Lewis apparatus in order to reduce the number of components and simplify layout of the substrate.

As to claim 72, Lewis teaches the number of the D/A converter circuit k/n , if the k -number of signal lines and n -number of signal lines driven by the particular D/A (See Fig. 15A, item 550).

As to claim 73, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 74-77, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col.10, Lines 1-21).

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As to claim 78, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a polysilicon thin transistor (See Abstract).

As to claim 79, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a single crystal transistor (See Abstract).

As to claim 80, Lewis teaches a signal driver circuit of an image display device with: a shift register to which multi-bit digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and plurality signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines, wherein an operation in which the digital picture signals are inputted to the respective shift registers, the inputted, the inputted digital picture signals are shifted in the shift register until they are outputted to the corresponding storage circuit by a latch signal, is repeated n times in a time corresponding to one horizontal scan period (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers which multi-bit picture signals are inputted Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and correspondent storage circuits in the Lewis apparatus in order to reduce the number of components and simplify layout of the substrate.

As to claim 81, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

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As to claims 82-85, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col.10, Lines 1-21).

As to claim 86, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a polysilicon thin transistor (See Abstract).

As to claim 87, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a single crystal transistor (See Abstract).

4. Claims 36-43, 54-60, 88-96, 97-104 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis in view of Suzuki and further in view of Akiyama et al. (US Patent No. 5,977,940).

As to claim 36, Lewis teaches an image display device with: a pixel array portion including k signal lines, a plurality of scan lines, a plurality of pixel electrodes provided at respective regions where the respective signal lines and the respective scan lines intersect with each other, and plurality of switching elements for driving the plurality of pixel electrodes; a signal line driver circuit for driving the k signal lines and a scan line driver circuit for driving the plurality of scan lines, wherein the signal line driver circuit includes shift registers to which m-bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

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Lewis does not show multiple shift registers with the number of the shift registers being m or multiple of m , $m * k/n$ storage circuits for storing output signals of the shift registers.

Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). Akiyama et al. teaches separate RGB shift registers (See Col. 2, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and Akiyama et al., and correspondent storage circuits in the Lewis apparatus including three signal lines corresponding to red, green and blue colors in order to reduce the number of components and simplify layout of the substrate.

As to claim 37, Lewis teaches the number of the D/A converter circuit k/n , if the k -number of signal lines and n -number of signal lines driven by the particular D/A (See Fig. 15A, item 550).

As to claim 38, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 39-42, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col. 10, Lines 1-21).

As to claims 43 Lewis teaches liquid crystal display (See Col. 1 Line 15).

As to claim 54, Lewis teaches an image display device with: a pixel array portion including k signal lines, a plurality of scan lines, a plurality of pixel electrodes provided at respective regions where the respective signal lines and the respective scan lines intersect with each other, and plurality of switching elements for driving the plurality of pixel electrodes; a

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signal line driver circuit for driving the k signal lines and a scan line driver circuit for driving the plurality of scan lines, wherein the signal line driver circuit includes shift registers to which m -bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers with the number of the shift registers being m or multiple of m , $m * k/n$ storage circuits for storing output signals of the shift registers, one horizontal scan period includes R, G and B portions.

Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). Akiyama et al. teaches separate RGB shift registers (See Col. 2, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and Akiyama et al., and correspondent storage circuits in the Lewis apparatus including three signal lines corresponding to red, green, blue colors and include R, G and B portions in order to reduce the number of components and simplify layout of the substrate.

As to claim 55, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 56-59, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col.10, Lines 1-21).

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As to claim 60 Lewis teaches liquid crystal display (See Col. 1 Line 15).

As to claim 88, Lewis teaches a signal line drive circuit of an image display device with m-bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers having a unit of three signal lines corresponding to RGB colors, $m * k/n$ storage circuits for storing output signals of the shift registers.

Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). Akiyama et al. teaches separate RGB shift registers (See Col. 2, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and Akiyama et al., and correspondent storage circuits in the Lewis apparatus including three signal lines corresponding to red, green and blue colors in order to reduce the number of components and simplify layout of the substrate.

As to claim 89, Lewis teaches the number of the D/A converter circuit k/n, if the k-number of signal lines and n-number of signal lines driven by the particular D/A (See Fig. 15A, item 550).

As to claim 90, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 91-94, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col.10, Lines 1-21).

As to claim 95, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a polysilicon thin transistor (See Abstract).

As to claim 96, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a single crystal transistor (See Abstract).

As to claim 97, Lewis teaches a signal line driver of an image display device with: a pixel array portion including k signal lines, a plurality of scan lines, a plurality of pixel electrodes provided at respective regions where the respective signal lines and the respective scan lines intersect with each other, and plurality of switching elements for driving the plurality of pixel electrodes; a signal line driver circuit for driving the k signal lines and a scan line driver circuit for driving the plurality of scan lines, wherein the signal line driver circuit includes shift registers to which m-bit (m is a natural number) digital picture signals are inputted, a plurality of D/A converter circuits for converting output signals of the storage circuits into analog signals, and k/n (n is an integer of not less than 2) signal line selecting circuits for transmitting output signals of the D/A converter circuits to the corresponding signal lines (See Fig. 15A, items 505, 515, 255, 520, 550, in description See Col. 5, Lines 60-67 and Col. 6, Lines 8-26).

Lewis does not show multiple shift registers with the number of the shift registers being m or multiple of m, $m * k/n$ storage circuits for storing output signals of the shift registers, one horizontal scan period includes R, G and B portions.

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Susuki teaches how to use multiple registers (See Fig. 1, items 6A, 6B and 6c, in description See Col. 3, Lines 12-18). Akiyama et al. teaches separate RGB shift registers (See Col. 2, Lines 12-18). It would have been obvious to one of ordinary skill in the art at the time of invention to use multiple shift registers as shown by Susuki and Akiyama et al., and correspondent storage circuits in the Lewis apparatus including three signal lines corresponding to red, green, blue colors and include R, G and B portions in order to reduce the number of components and simplify layout of the substrate.

As to claim 98, Lewis teaches D/A converter circuit instead of "lamp type D/A" (See Fig 10, items 255, 260, in description See Col. 8, Lines 44-67 and Col. 9, Lines 1-18).

As to claims 99-102, Lewis teaches the storage circuit is a latch circuit with analog switch, holding capacitance with clocked inverter and a plurality of inverters (See Fig. 14A, 14B, items Q1, Q2, nQ1, nQ2, 400, 420, 430, in description See Col. 9, 51-67 and Col.10, Lines 1-21).

As to claim 103, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a polysilicon thin transistor (See Abstract).

As to claim 104, Lewis teaches a circuit, wherein the driver circuit of the image display device is formed of a single crystal transistor (See Abstract).

5. Claims 9, 26, 44, 61 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis as aforementioned in claims 1, 19, 36, 54 in view of Friend et al (US Patent No. 5,247,190), cited by the applicant.

Lewis does not teach a display using electroluminescence (EL) material.

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Friend et al. shows a display using electroluminescence (EL) material n (See Fig. 3, items 3-5, in description See Col.8, Lines 5-20). It would have been obvious to one of ordinary skill in the art at the time of invention to use materials as shown by Friend et al in the Lewis apparatus in order to increase the range of applications.

6. Claims 10-18, 27-35, 45-53, 62-70 rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis as aforementioned in claims 1,19, 36, 54 in view of Matsueda et al (US Patent No. 6,384,806 B1).

As to claims 10, 27, 45, 62 Lewis does not teach a portable telephone, which uses the image display device.

Matsueda et al. shows a portable telephone, which uses the image display device (See Fig. 19-22, in description See Col. 23, Lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the portable telephone as shown by Matsueda et al. in order to increase the range of applications.

As to claims 11, 28, 46, 63 Lewis does not teach a video camera, which uses the image display device.

Matsueda et al. shows a video camera, which uses the image display device (See Fig. 19-22, in description See Col. 23, Lines 8-15). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the video camera as shown by Matsueda et al. in order to increase the range of applications.

As to claims 12, 29, 47, 64 Lewis does not teach a personal computer, which uses the image display device.

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Matsueda et al. shows a personal computer, which uses the image display device (See Fig. 20, in description See Col. 22, Lines 38-43). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the personal computer as shown by Matsueda et al. in order to increase the range of applications.

As to claims 13, 30, 48, 65 Lewis does not teach a head mounted display, which uses the image display device.

Matsueda et al. shows a head mounted display, which uses the image display device (See Fig. 21, in description See Col. 22, Lines 57-65). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the head mounted display as shown by Matsueda et al. in order to increase the range of applications.

As to claims 14, 31, 49, 66 Lewis does not teach a television, which uses the image display device.

Matsueda et al. shows a television, which uses the image display device (See Fig. 19-22, in description See Col. 23, Lines 8-17). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the television as shown by Matsueda et al. in order to increase the range of applications.

As to claims 15, 32, 50, 67 Lewis does not teach a portable book, which uses the image display device.

Matsueda et al. shows a portable book, which uses the image display device (See Fig. 19-22, in description See Col. 23, Lines 8-17). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the portable book as shown by Matsueda et al. in order to increase the range of applications.

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As to claims 16, 33, 51, 68 Lewis does not teach a CVD player, which uses the image display device.

Matsueda et al. shows a CVD player, which uses the image display device (See Fig. 19-22, in description See Col. 23, Lines 8-17). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the CVD player as shown by Matsueda et al. in order to increase the range of applications.

As to claims 17, 34, 52, 69 Lewis does not teach a digital camera, which uses the image display device.

Matsueda et al. shows a CVD player, which uses the digital camera device (See Fig. 19-22, in description See Col. 23, Lines 8-17). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the digital camera as shown by Matsueda et al. in order to increase the range of applications.

As to claims 18, 35, 53, 70 Lewis does not teach a projector, which uses the image display device.

Matsueda et al. shows a CVD player, which uses the projector device (See Fig. 19, in description See Col. 22, Lines 3-35). It would have been obvious to one of ordinary skill in the art at the time of invention to use the Lewis apparatus in the projector as shown by Matsueda et al. in order to increase the range of applications.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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The DaCosta et al. (US Patent No. 6,281,891 B1) reference discloses display with an array and multiplexer on substrate and with attached digital-to-analog converter integrated circuit having many outputs.

The Kim (US Patent No. 6,333,725 B1) reference discloses data interfacing apparatus of ac type plasma display panel system.

The Scheffer et al. (US Patent No. 5,420,604) reference discloses a LCD addressing system.

The Matsueda et al. (US Patent No. 6,380,917 B2) reference discloses driving circuit of electro-optical device...

The Sasaki (US Patent No. 6,049,321) reference discloses a LCD.

The Brownlow et al. (US Patent No. 6,232,946 B1) reference discloses active matrix drive circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

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October 18, 2002



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600